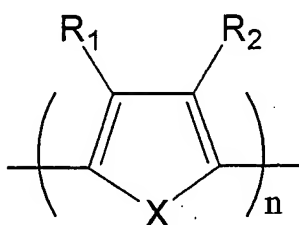


What is claimed is:

1. An anti-reflection film comprising:

a substrate consisting of a transparent polymer film; and

5 at least one conductive layer formed by depositing a heterocyclic conjugated polymer of the following structural formula (1) on at least one surface of the substrate:



(1)

wherein X represents O, Se, S or NH; and R₁ and R₂, which may be
10 the same or different, each independently represents H, a C₃-C₁₅ alkyl group, a C₃-C₁₅ alkylether group, an halogen atom, or a substituent which forms a cyclic structure while containing hydrocarbon together with at least one atom selected from the group consisting of S and O.

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2. The anti-reflection film of Claim 1, which additionally comprises a high refractive thin film layer between the substrate and the conductive layer, the high refractive thin film layer having a higher refractive index than the conductive layer.

3. The anti-reflection film of Claim 2, which additionally comprises a hard coating layer between the substrate and the high refractive thin film layer, the hard coating layer serving to increase the surface hardness of the substrate.

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4. The anti-reflection film of Claim 1, which additionally comprises a low refractive thin film layer on the conductive layer, the low refractive thin film layer having a lower refractive index than the conductive layer.

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5. The anti-reflection film of Claim 3, which additionally comprises a low refractive thin film layer on the conductive layer, the low refractive thin film layer having a lower refractive index than the conductive layer.

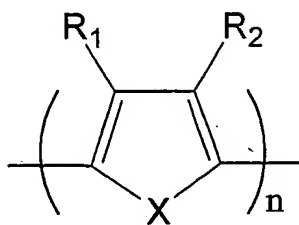
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6. A method for producing an anti-reflection film, which comprises:

a first step of applying an oxidizing agent on at least one surface of a substrate consisting of a transparent polymer film;

20 a second step of subjecting a heterocyclic conjugated monomer of the following structural formula (1) to vapor phase polymerization on the substrate applied with the oxidizing agent and then removing an unreacted portion of the oxidizing agent, thereby forming at least one conductive layer made of the

resulting heterocyclic conjugated polymer of the structural formula (1):



(1)

wherein X represents O, Se, S or NH; and R₁ and R₂, which may be the same or different, each independently represents H, C₃-C₁₅ alkyl, C₃-C₁₅ alkylether, an halogen atom, or a substituent which forms a cyclic structure while containing hydrocarbon together with at least one atom selected from the group consisting of S and O.

7. The method of Claim 6, which additionally comprises forming a high refractive thin film layer having a higher refractive index than the conductive layer on the substrate, before the first step.

8. The method of Claim 6, which additionally comprises forming a low refractive thin film layer having a lower refractive index than the conductive layer on the conductive layer, after the second step.

9. The method of Claims 6, which additionally comprises adding a host polymer to the oxidizing agent.

10. The method of Claims 7, which additionally comprises
5 adding a host polymer to the oxidizing agent.

11. The method of Claims 8, which additionally comprises adding a host polymer to the oxidizing agent.